

## Executive Summary

Last revised September 1, 1992

**Mine Name:** Barney's Canyon Mine - Permit Revision/Expansion **I.D. No:** M/035009  
**Operator:** Kennecott Corporation **County:** Salt Lake  
P.O. Box 311 **New/Existing:** Existing (original  
Bingham Canyon, UT. 84006-0311 approval 1989)  
**Telephone:** (801) 569-7200 **Mineral Ownership:** Private  
**Contact Person:** David I. Hodson, General Manager **Surface Ownership:** Kennecott  
**Lease No.(s):** N/A  
**Permit Term:** Life of Mine

**Life of Mine:** 8 years (based upon present ore reserves)

**Legal Description:** Project Expansion will impact lands located within: Township 3 South, Range 3 West, Sections 1, 2, 3, 10, and 11.

**Mineral(s) to be Mined:** Gold, Silver

**Mining Methods:** Open Pit Mining - Cyanide Heap Leach Operation

**Acres to be Disturbed:** 707 acres approved (1989), @218 new acres (revision), total 925 acres, @770 acres will be reclaimed.

**Present Land Use:** Wildlife Habitat, surface mining, mineral processing and mineral exploration activities.

**Postmining Land Use:** Wildlife Habitat and Livestock Grazing

### Soils and Geology:

**Soil Description:** All of the soils are very gravelly and/or cobbly. Textures range from loams to silt or clay loams to silty clays, organic matter above 1%.

**Variances from Reclamation Standards (Rule R647) Granted:** R647-4-107.5 (Soils), R647-4-111.6 (Slopes), R647-4-111.7 (Highwalls), R647-4-111.12 (Topsoil Redistribution), and R647-4-111.13 (Revegetation).

**pH:** 5.78 - 7.73

**Special Handling Problems:** Phosphorus is deficient, moderate to high erosion potential, some shallow soils on steep terrain cannot be safely removed and stockpiled.

**Geology Description:** Project area located east edge of Paleozoic core of Oquirrh Mtns. Barneys Cyn. deposit occurs in Permian dolomite of Park City Formation and underlying calcareous sandstone of Permian Kirkman-Diamond Creek Formation. Melco deposit occurs in Permian calcareous sandstones of Kirkman-Diamond Creek Formation and underlying orthoquartzite of Freeman Peak Formation. The BC South deposits are hosted

in Kirkman-Diamond Creek Sandstone near contact with orthoquartzites of underlying Freeman Peak Formation. Gold mineralization hosted in moderately dipping, clay-rich zones of slip and brecciation within interlayered sandstone and orthoquartzite.

### **Hydrology:**

**Ground Water Description:** Overall project area is located in a general recharge area for underlying aquifers. Depth to the confined bedrock aquifer in project processing facilities area is approximately 165 feet. Depth to local water table in area of Melco pit is estimated at 6826 feet AMSL, @50 feet below final Melco pit depth. The local water table in vicinity of proposed BC South pits is estimated at 6200 to 6400 feet AMSL. Final pit depths for the North BC South and South BC South pits are 6475 and 6575 feet AMSL, respectively. Exploration drilling identified a localized zone of perched water adjacent to location of the South BC South pit. Proposed pit design makes interception of the perched water zone(s) unlikely.

**Surface Water Description:** Barney's Creek is intermittent to perennial (2 mi. reach), is adjacent to the process facilities area and drains into Jordan River. Other small, intermittent and ephemeral drainages in the project area of minimal flow. One spring is located in general area (Bancroft Spring).

**Water Monitoring Plan:** To be determined by the State Department of Environmental Quality, Division of Water Quality pursuant to Ground Water Discharge Permit.

### **Ecology:**

**Vegetation Type(s); Dominant Species:** North slope/Conifer-Shrub Community, Riparian Community, Oak Woodland/Mountain Brush Community, Shrub Oak/Big Sagebrush Community and Big Sagebrush Community.

**Percent Surrounding Vegetative Cover:** Cover varies depending on community type and ranges from 50 - 70%.

**Wildlife Concerns:** Some temporary losses of deer and elk winter range until ultimate reclamation and successful revegetation occurs.

**Surface Facilities:** Barney's Canyon, Melco, North and South BC South pits, associated mine dumps, haul/access roads, processing plant site - includes ore crushing and agglomerating plant, several heap leach pads, a leachate processing plant and refinery, processing solution ponds, and associated processing facilities.

## **Mining and Reclamation Plan Summary: . . . .**

### **During Operations:**

1. Typical open pit mining operations of 2 existing pits and 2 new pits. Mined ore is hauled by truck from the open pits to the processing plant site. Waste is hauled to designated waste dump areas. Ore is crushed and agglomerated and stacked upon lined heap leach pads equipped with leak detection monitoring systems. Precious metals are leached with a weak cyanide solution, precipitated in the processing plant, then refined into dore bars.
2. The principal existing project components are the Barney's and Melco open pit mines, related mine waste dumps and processing plant. The processing plant consists of an ore crushing and agglomerating plant, several heap leach cells, a leachate processing plant and refinery, offices and shops.

This project expansion/revision will not change any of the existing facilities except for an expansion in the size of the Melco pit, and the development of the South BC South and North BC South pits and their associated waste dumps.

3. Approximately 1,000,000 cubic yards of topsoil will be salvaged and stockpiled for final reclamation of disturbed areas.
4. Mining commenced in 1989 and is anticipated to continue through 1997. The heap leaching operation will be operated for approximately one year after mining has ceased. Reclamation activities will commence concurrently with the cessation of mining operations.

### **After Operations:**

1. Leach pads and ponds will be decommissioned, graded, topsoiled and revegetated.
2. Pit highwalls will not be reclaimed. Accessible pit benches will be revegetated. The South BC South pit will be partially backfilled with waste from North BC South pit. Waste dumps will be revegetated.
3. The primary sedimentation pond and South BC impoundment will be left for livestock and wildlife grazing.
4. The majority of the remaining disturbed areas will be graded, topsoiled, and revegetated.

Page 4  
Executive Summary  
Kennecott Utah Copper  
M/035/009

**Surety :**

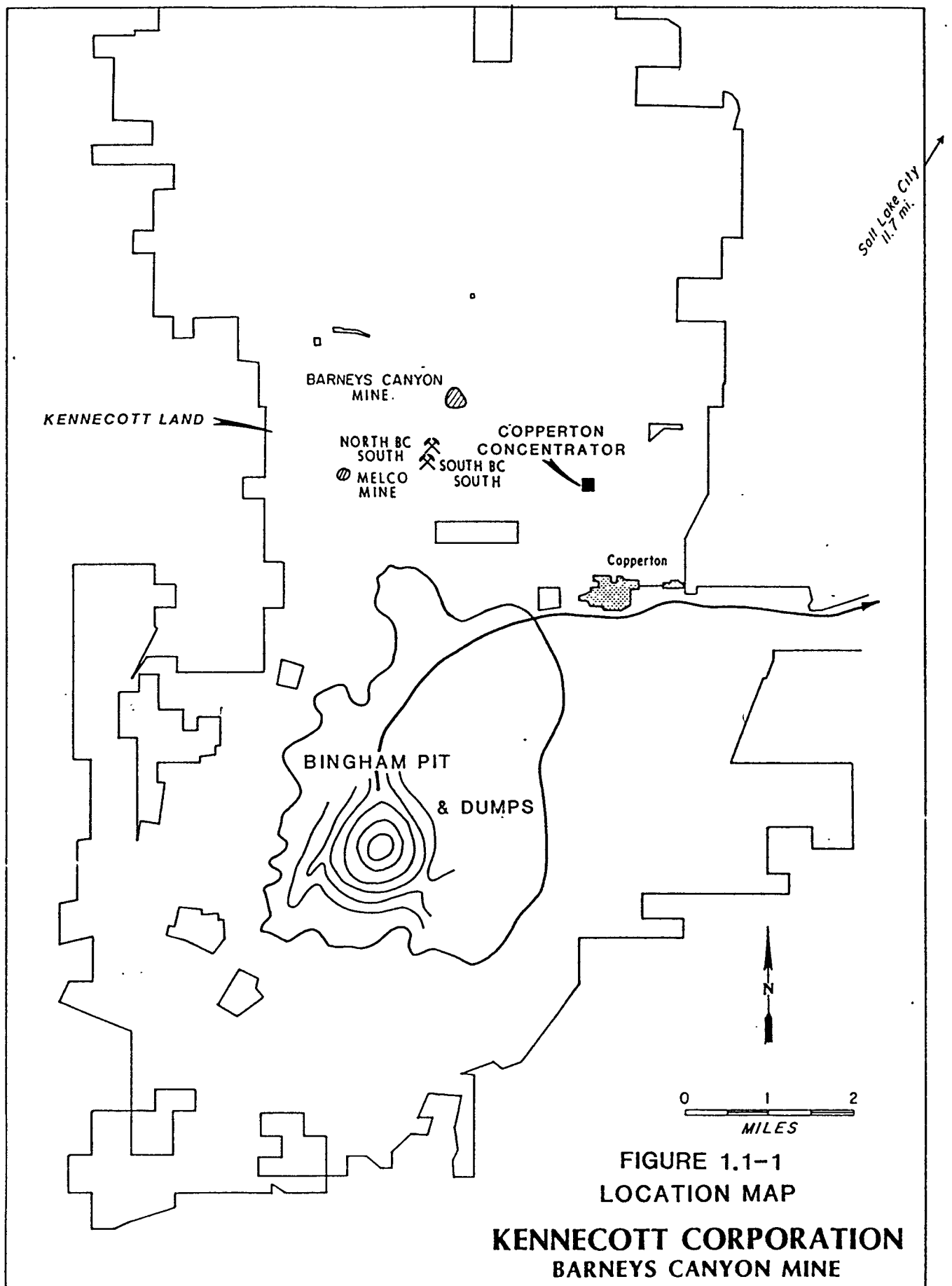
**Amount:** \$3,020,000 (1997 dollars)

**Form:** Surety bond (Safeco Insurance Company of America)

**Renewable Term:** 5 years - 1997

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M035009

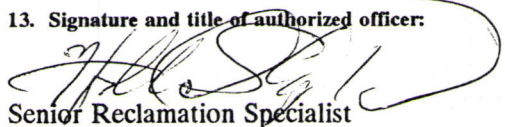
# BARNEYS CANYON PROJECT



M/035/009

STATE ACTIONS

Mail to:  
Grants Coordinator  
State Clearinghouse  
116 State Capitol  
Salt Lake City, Utah 84114  
533-4971

1. Administering State Agency:  Division of Oil, Gas and Mining 355 West North Temple, Suite 350 Salt Lake City, Utah 84180-1203	2. State Application Identifier Number: (assigned by State Clearinghouse)
	3. Approximate date project will start:  October 1, 1992
4. Areawide clearinghouse(s) receiving State Action:  Wasatch Front Regional Council 420 West 1400 South, Suite 200 Bountiful, Utah 84010	
5. Type of action: <input type="checkbox"/> Lease <input type="checkbox"/> Permit <input type="checkbox"/> License <input type="checkbox"/> Land Acquisition <input type="checkbox"/> Land Sale <input type="checkbox"/> Land Exchange <input checked="" type="checkbox"/> Other <u>Revise Existing Permit</u>	
6. Title of proposed action:  Revision of Mining and Reclamation Plan, Kennecott Corporation, Barneys Canyon Gold Mine	
7. Description:  Kennecott Corporation intends to modify its operations at its open pit gold mine, heap leach processing facility. The modification will involve development and operation of two new open pit mines and expansion of the Melco open pit mine. Process facilities and ancillary facilities are not affected by the proposed changes. The principal components of the expansion include the 3 open pits, related mine waste dumps and mine haulage road.  The total acreage of disturbance will change from 707 acres to 925 acres; an increase of approximately 218 acres.	
8. Land affected (site location map required) (indicate county)  Sections 1, 2 3, and 4; Township 3 South; Range 3 West	
9. Has the local government(s) been contacted?  To be copied with this notice.	
10. Possible significant impacts likely to occur:  The operator proposed to leave two of the three pits involved in the expansion unreclaimed. Also, the operator has asked that a variance be granted for two of the waste dumps associated with the expansion. The total unreclaimed acreage will equal 78 acres. Partial reclamation will occur on 48 acres of the waste dumps.	
11. Name and phone number of district representative from your agency near project site, if applicable:  N/A	
12. For further information, contact:  Holland Shepherd	13. Signature and title of authorized officer:  Senior Reclamation Specialist
Phone: (801) 538-5340	Date: August 25, 1992

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